



# Utah Water Assessment & Conditions Monitoring (Drought Webinar)

The meeting will begin shortly



Thank you to our contributors

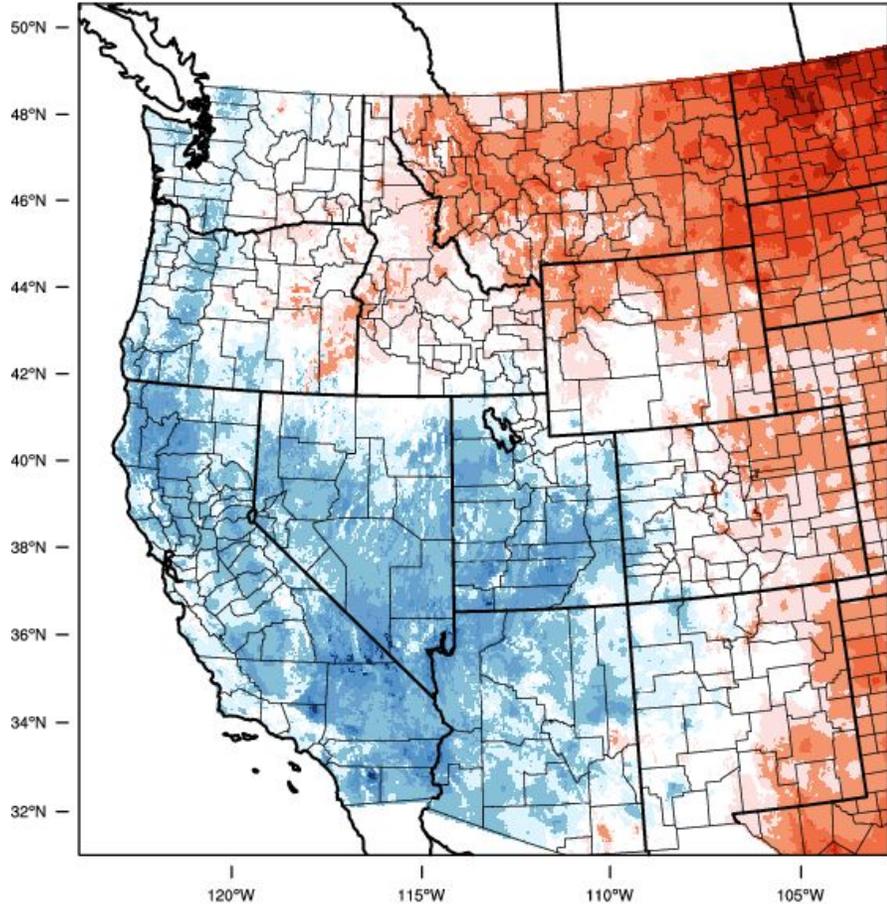


# **Utah Water Assessment & Conditions Monitoring Webinar**

**November 9, 2021**

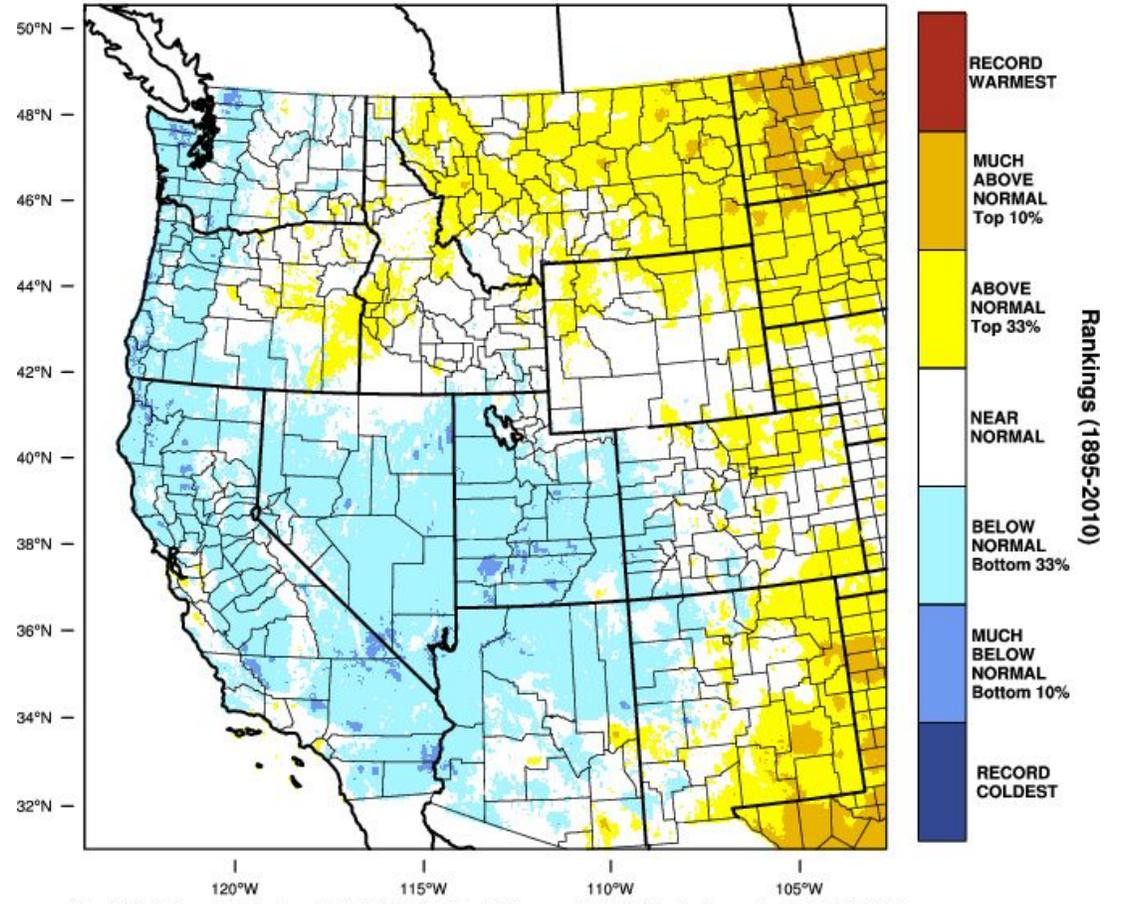
# Temperature

Western United States - Mean Temperature  
October 2021 Departure from 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 NOV 2021

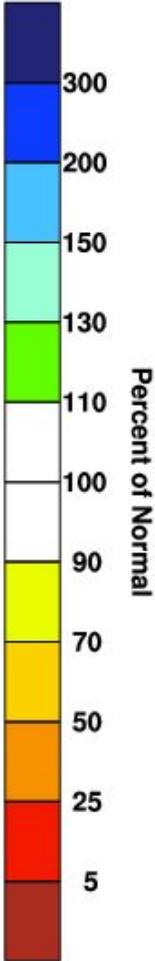
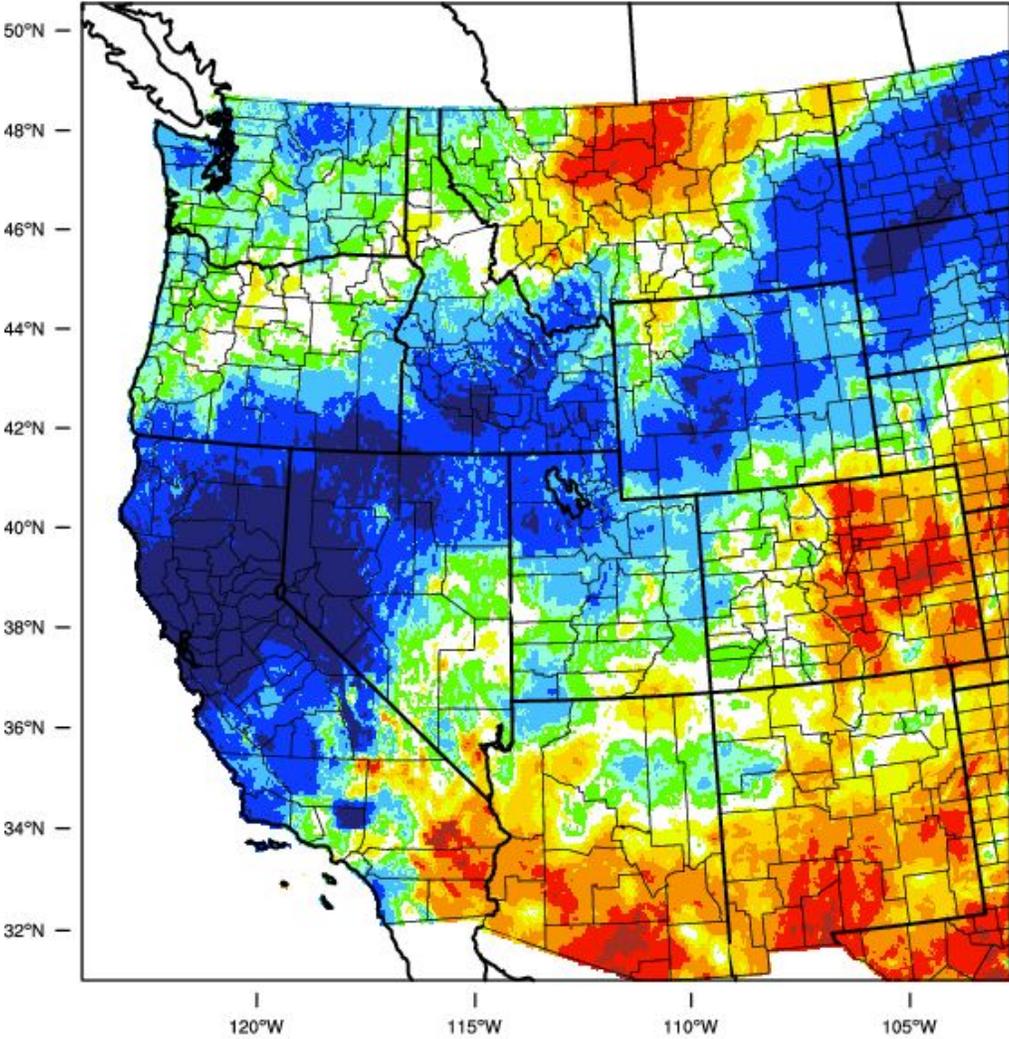
Western United States - Mean Temperature  
October 2021 Percentile



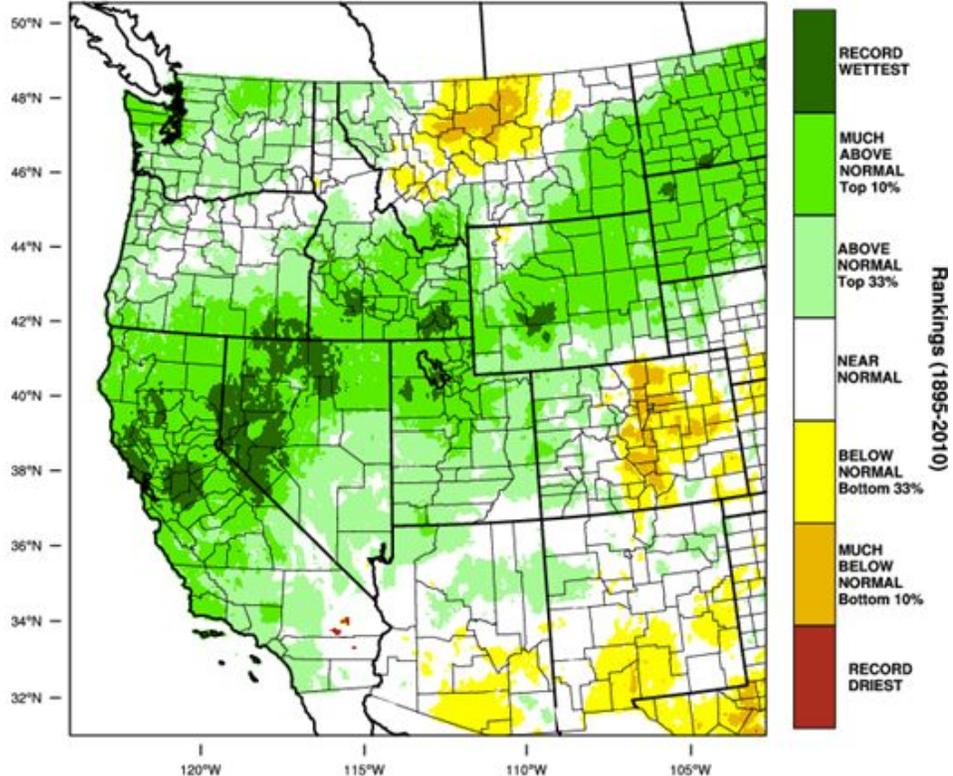
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 NOV 2021

# Precipitation (Percent of Average)

Western United States - Precipitation  
 October 2021 Percent of 1981-2010 Normal



Western United States - Precipitation  
 October 2021 Percentile

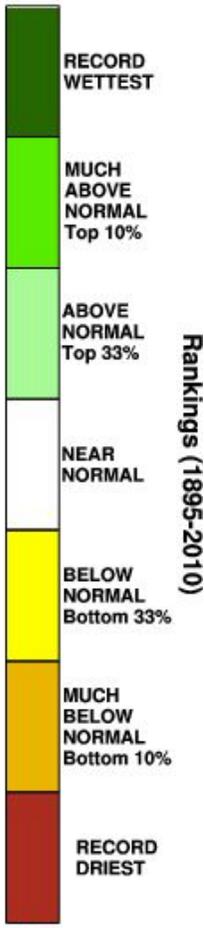
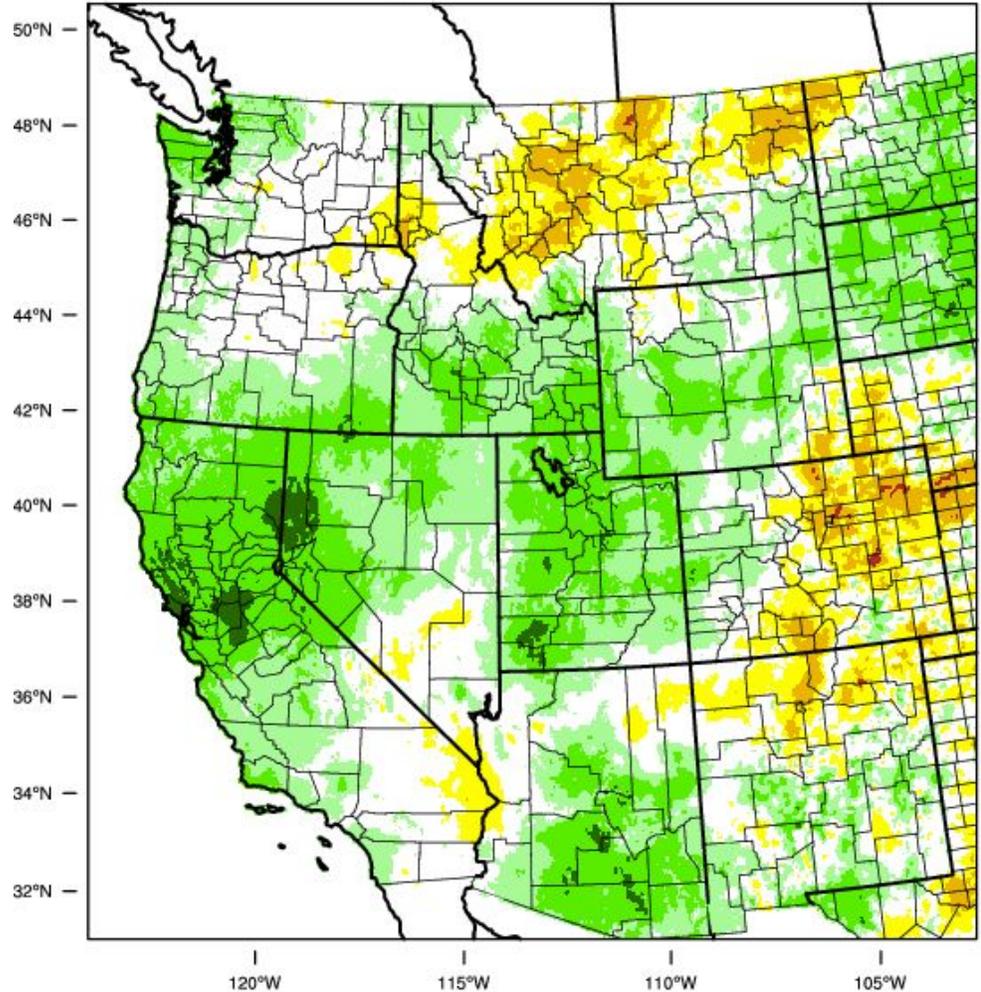


WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 NOV 2021

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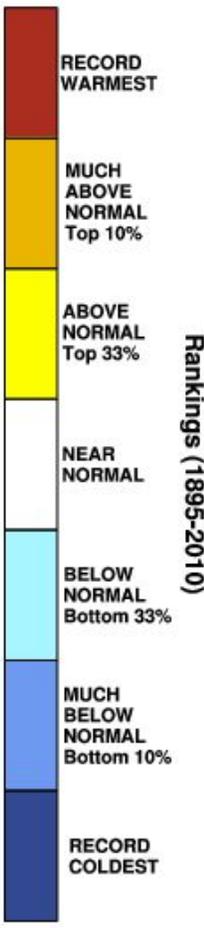
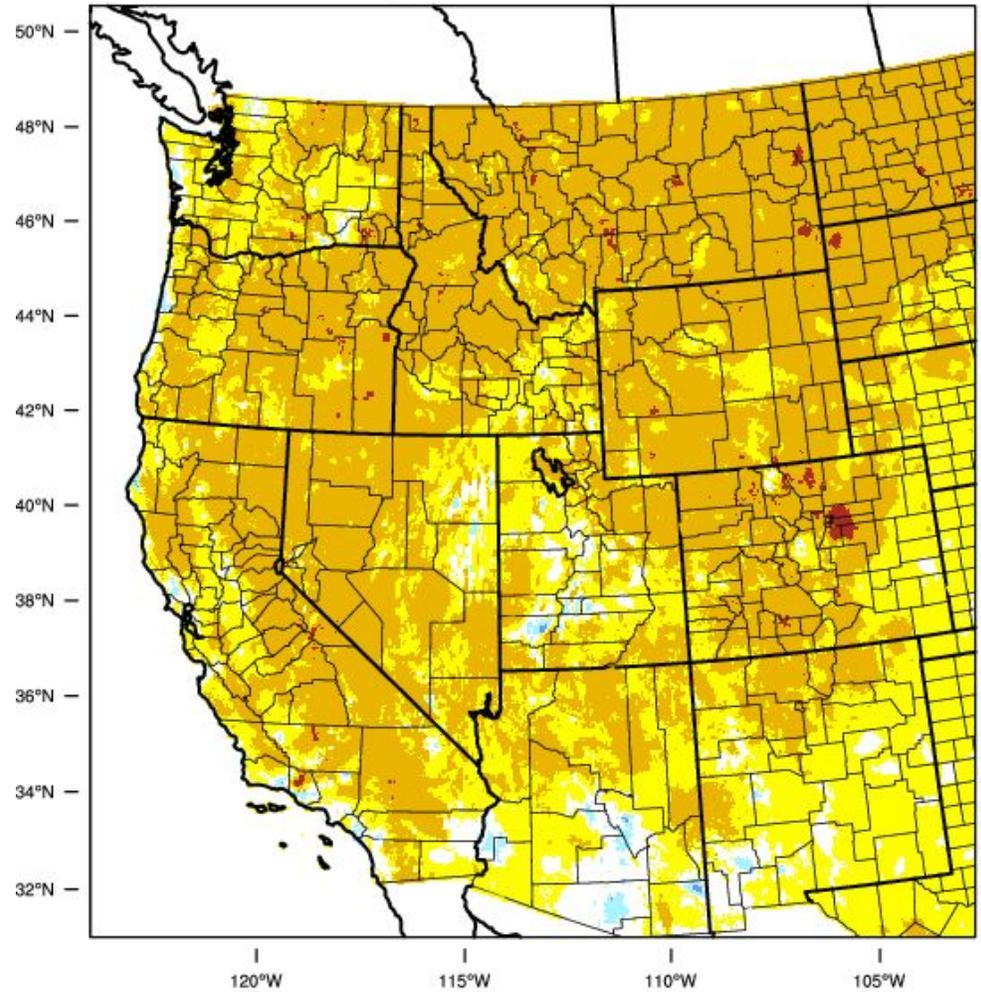
# Conditions since July

**Western United States - Precipitation**  
July-October 2021 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 NOV 2021

**Western United States - Mean Temperature**  
July-October 2021 Percentile

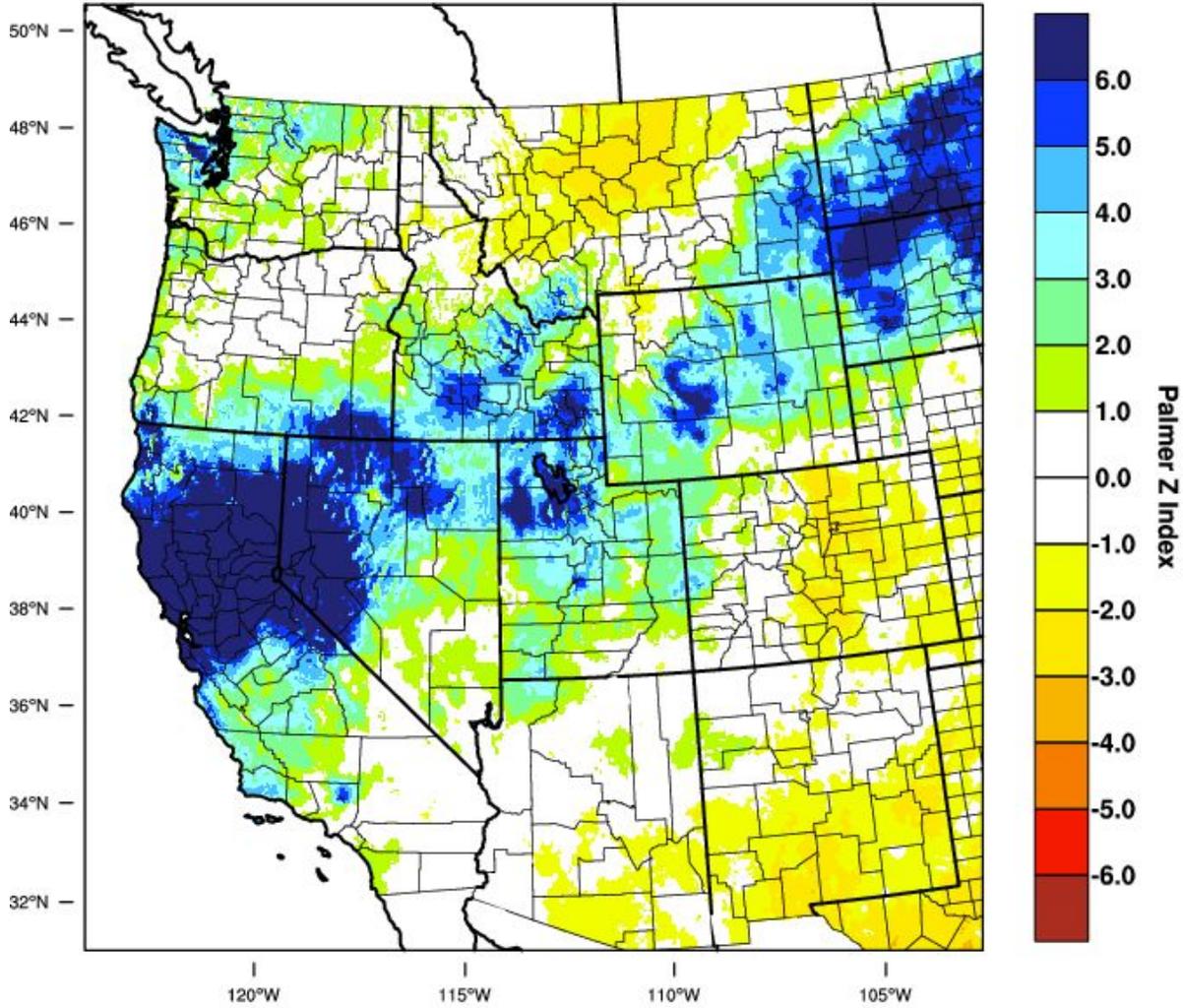


WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 NOV 2021

# Short-term drought relief

## Western United States - Palmer Z-Index

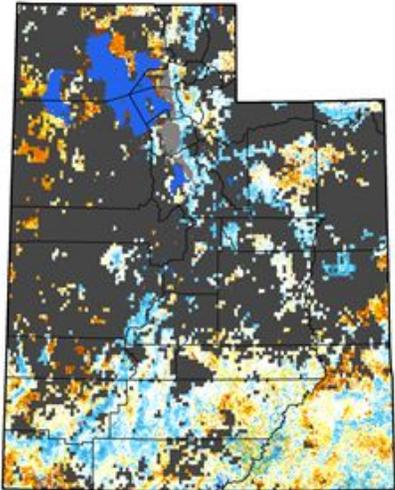
October 2021



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 NOV 2021

## Quick Drought Response Index Utah

November 7, 2021  
(Week 45)

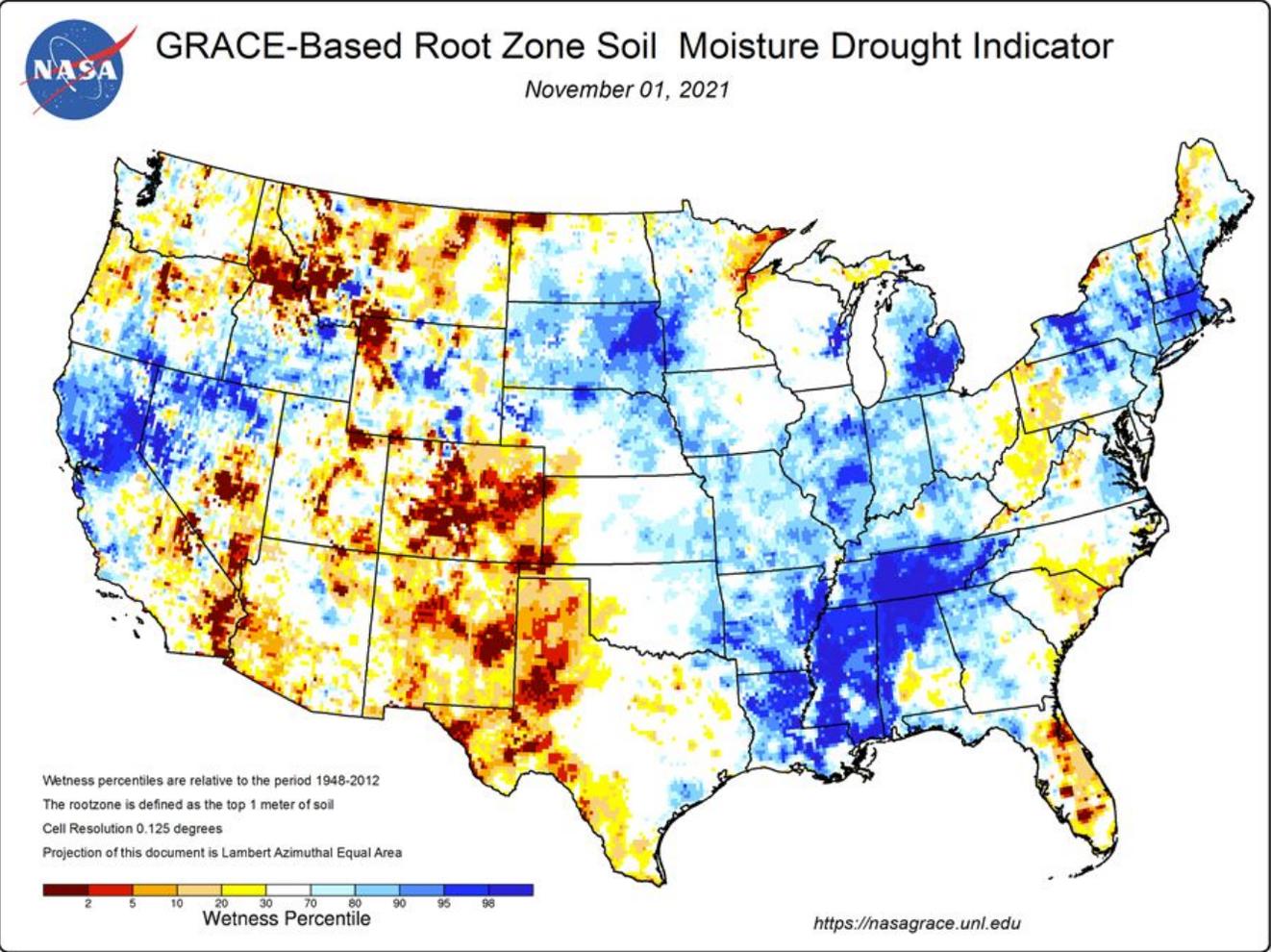
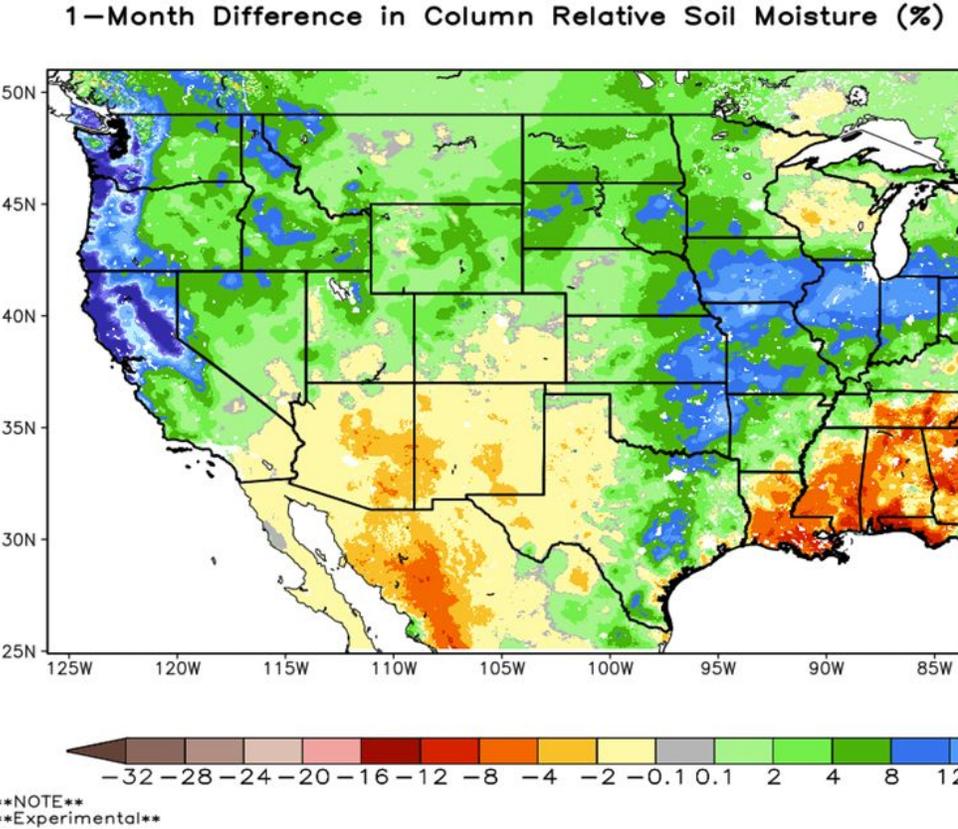


Conditions Relative to  
4-Week Historical Average

- Wetter
- Near Average
- Drier
- Out of Season
- Urban
- No Data
- Water



# Soil Moisture Improvements Continue



# CPC 3-month climate outlook



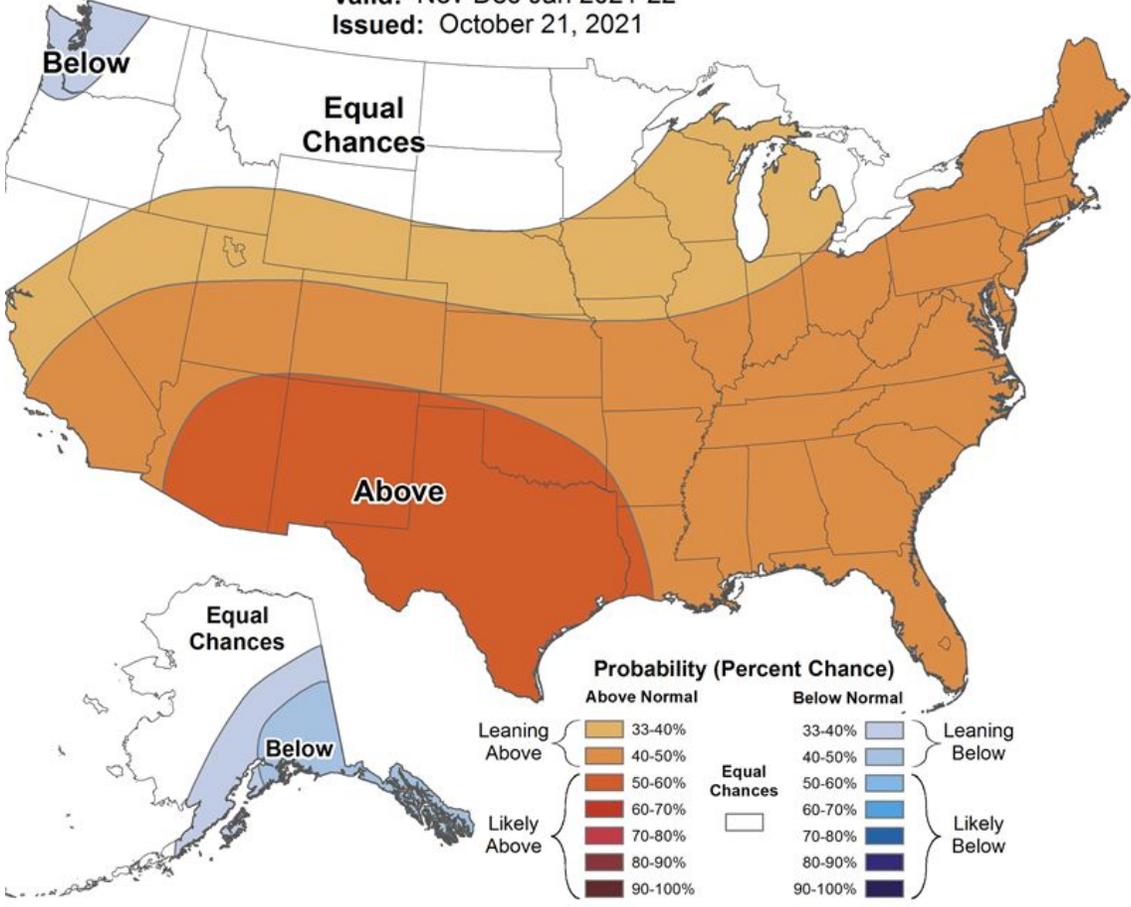
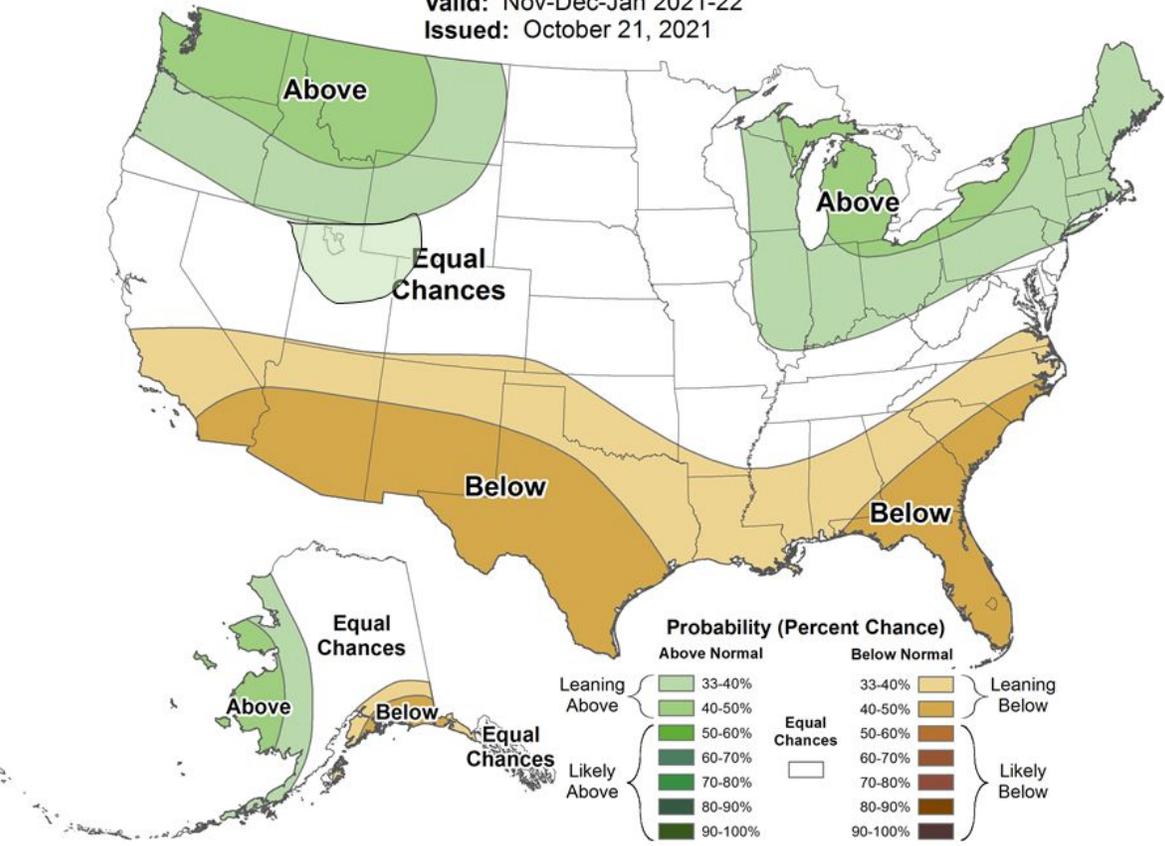
## Seasonal Precipitation Outlook

Valid: Nov-Dec-Jan 2021-22  
 Issued: October 21, 2021

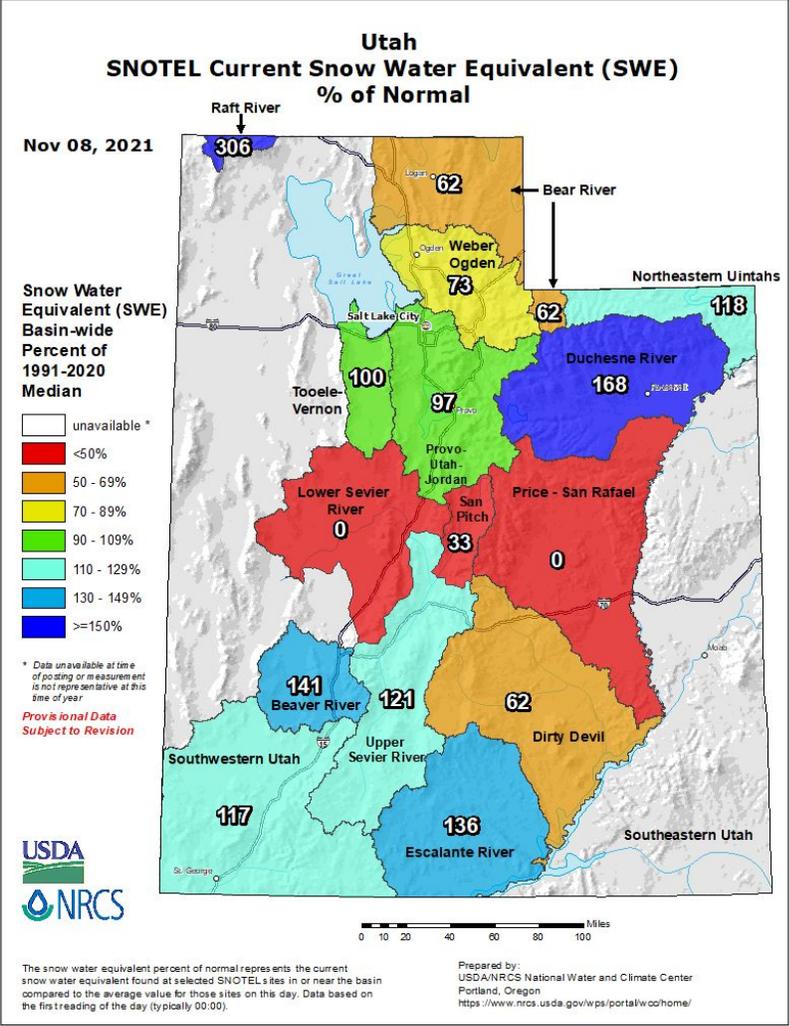
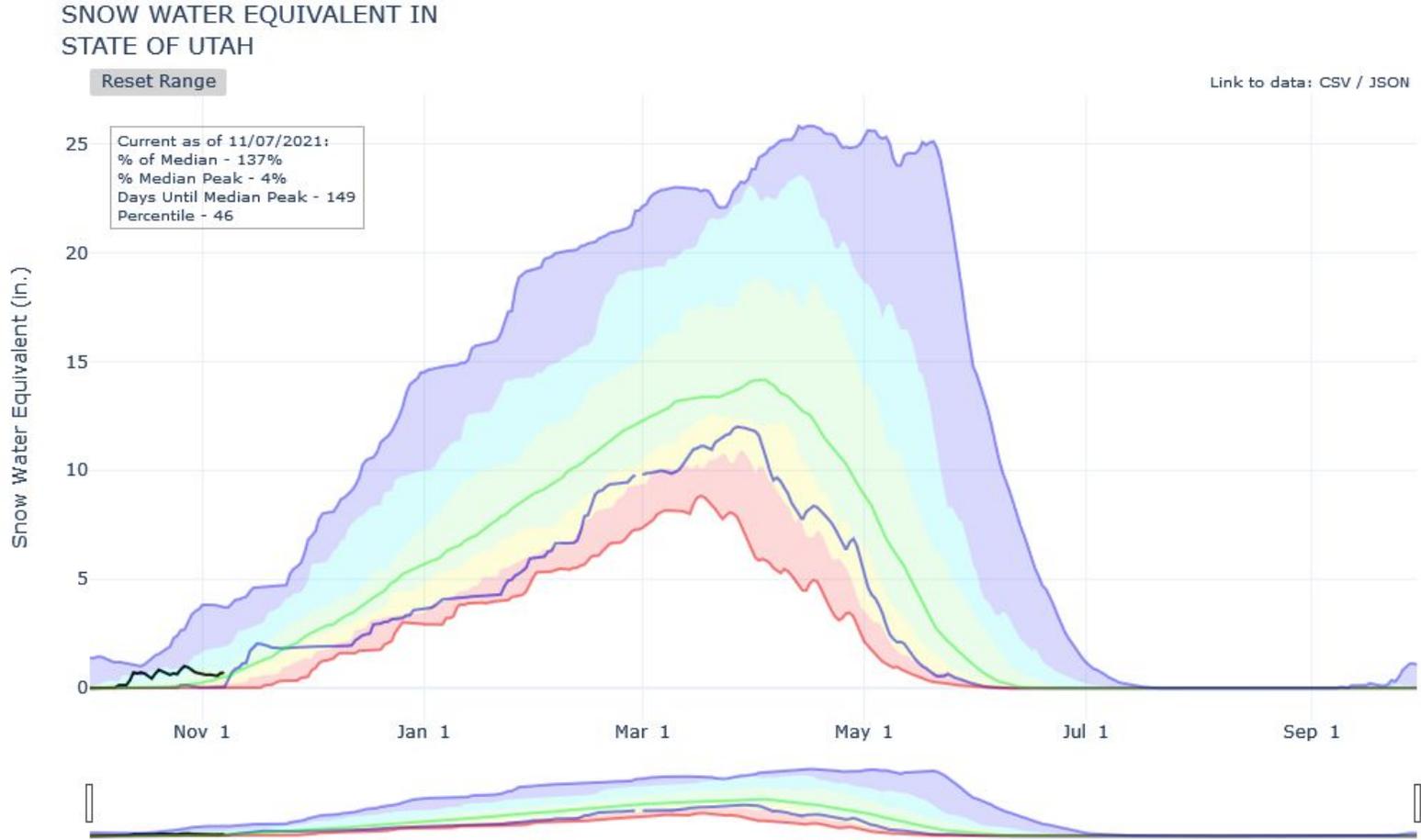


## Seasonal Temperature Outlook

Valid: Nov-Dec-Jan 2021-22  
 Issued: October 21, 2021



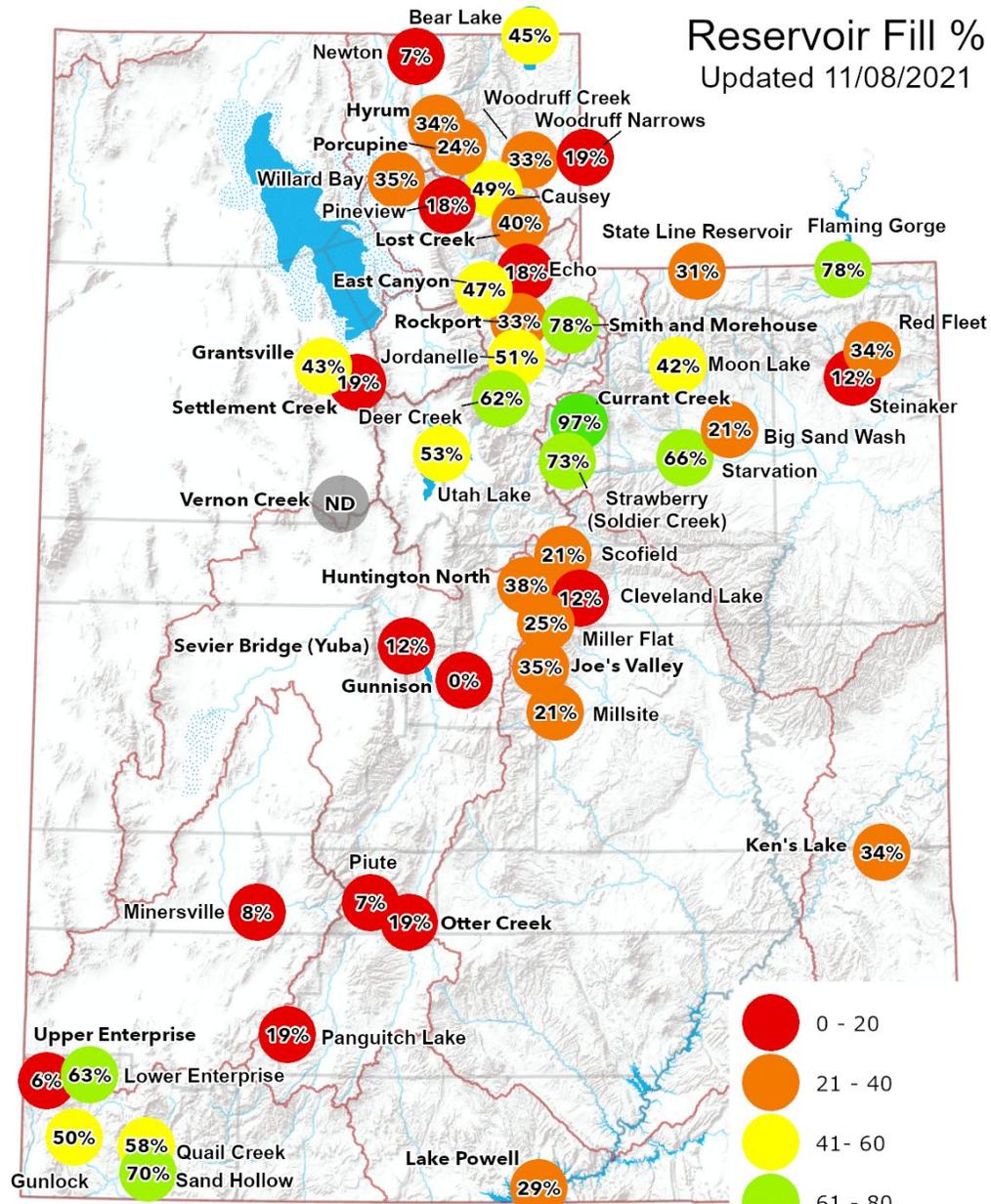
# Snowpack (Water Year to date Percent of Average)





# Reservoir Fill %

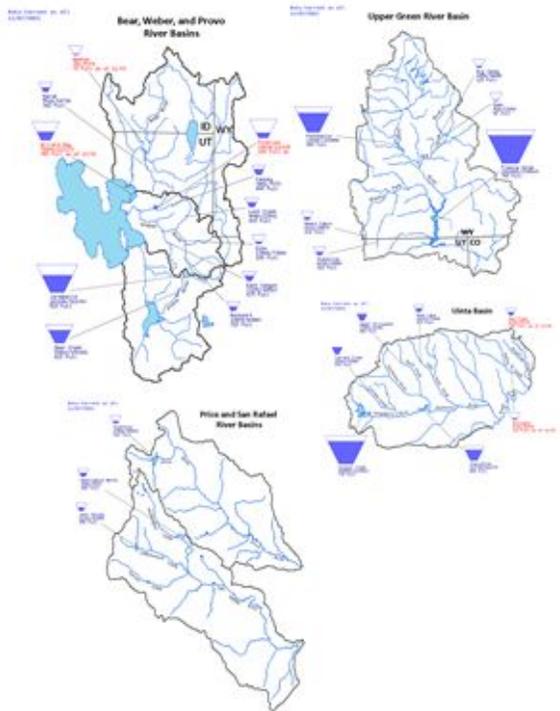
Updated 11/08/2021



Data Sources  
 Bureau of Reclamation, Bear River Commission,  
 Duchesne County Water Conservancy District,  
 Emery Water Conservancy District,  
 Utah Division of Water Rights,  
 Sevier River Water Users Association,  
 Washington County Water Conservancy District



## Teacup Diagrams

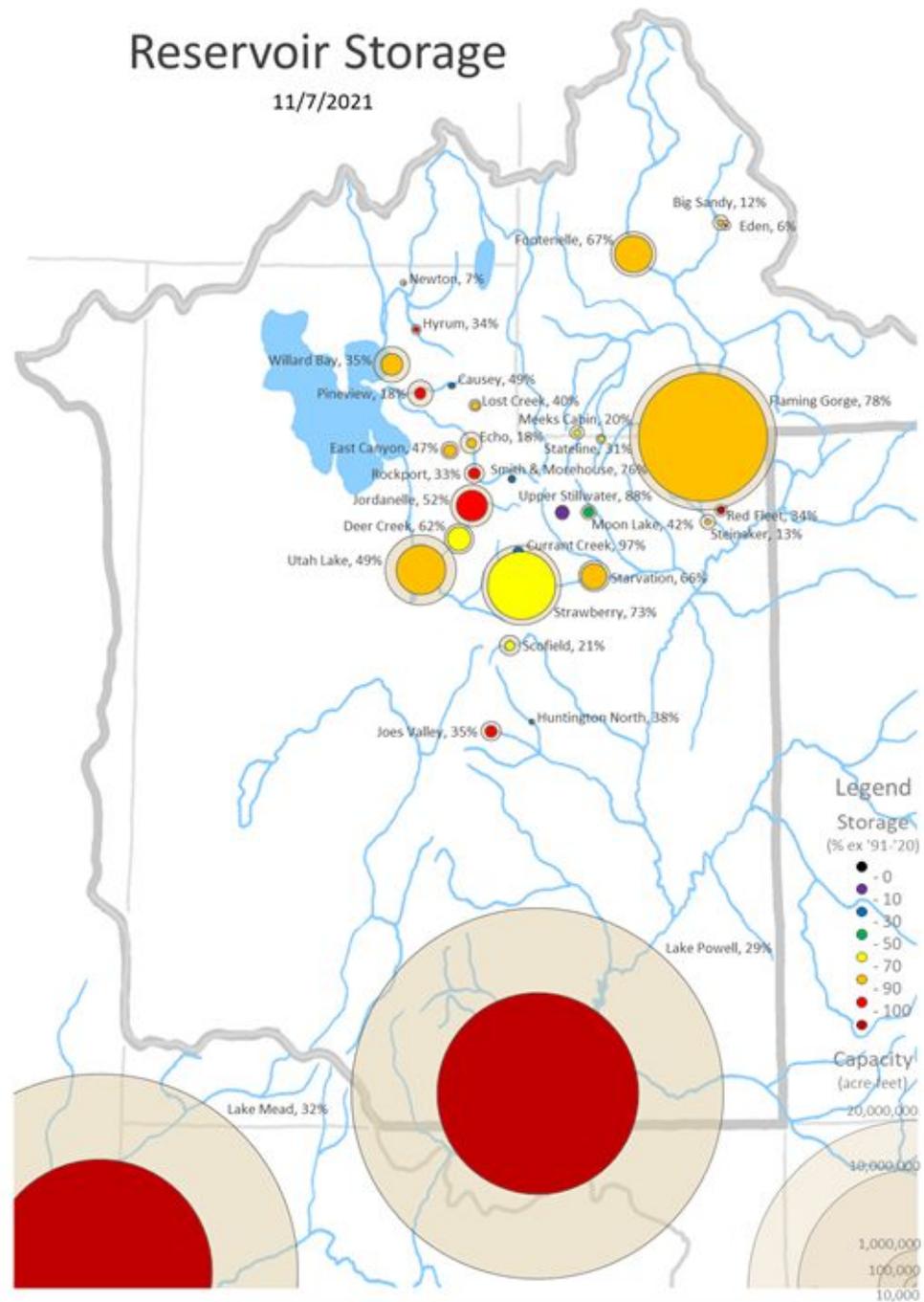


<https://www.usbr.gov/uc/water/basin/index.html>

Agency - USBR Provo Area Office  
 Presenter - Gary Henrie

## Reservoir Storage

11/7/2021



## Reservoir Storage

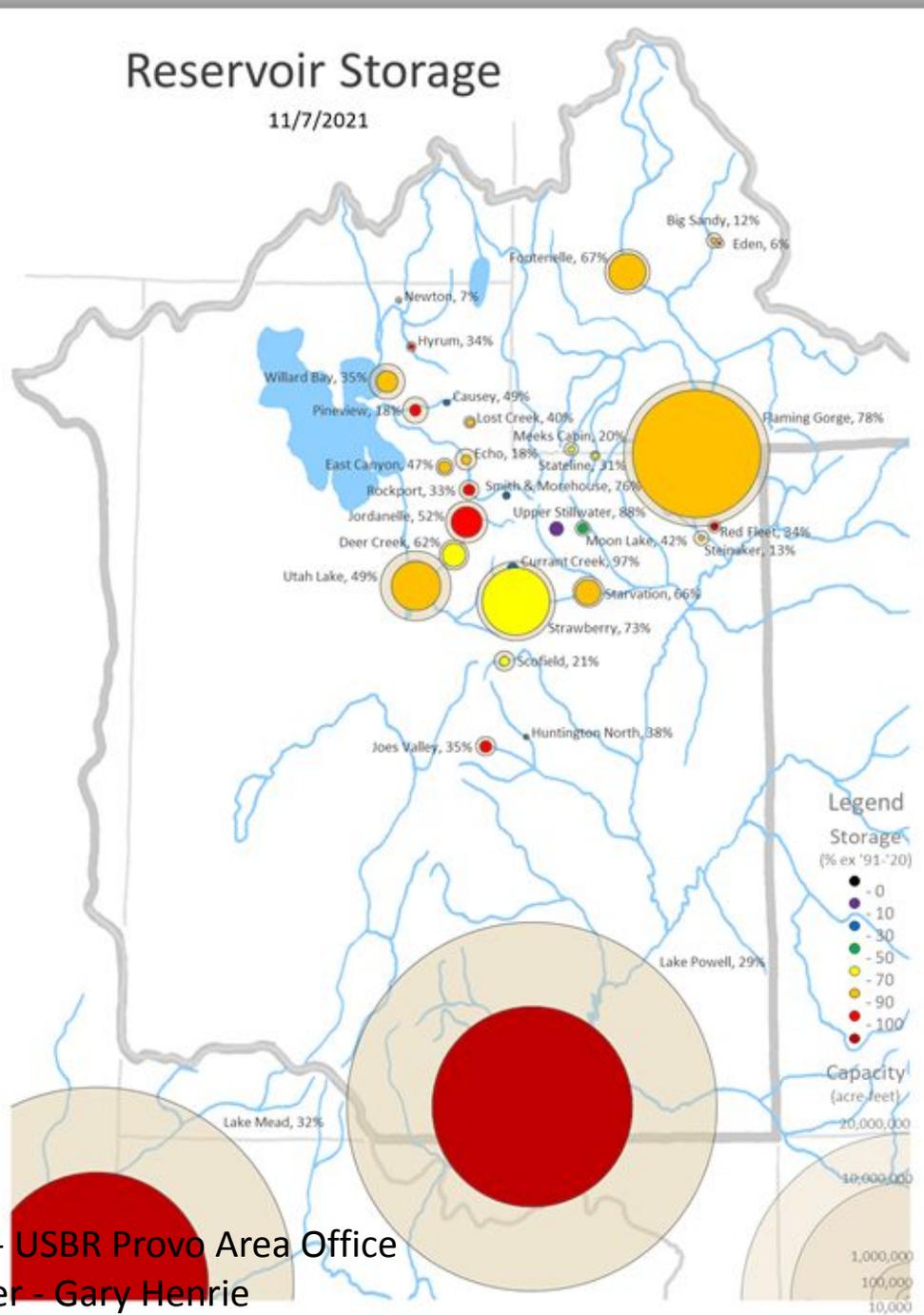


[https://www.usbr.gov/uc/water/hydrodata/reservoir\\_data/site\\_map.html](https://www.usbr.gov/uc/water/hydrodata/reservoir_data/site_map.html)



# Reservoir Storage

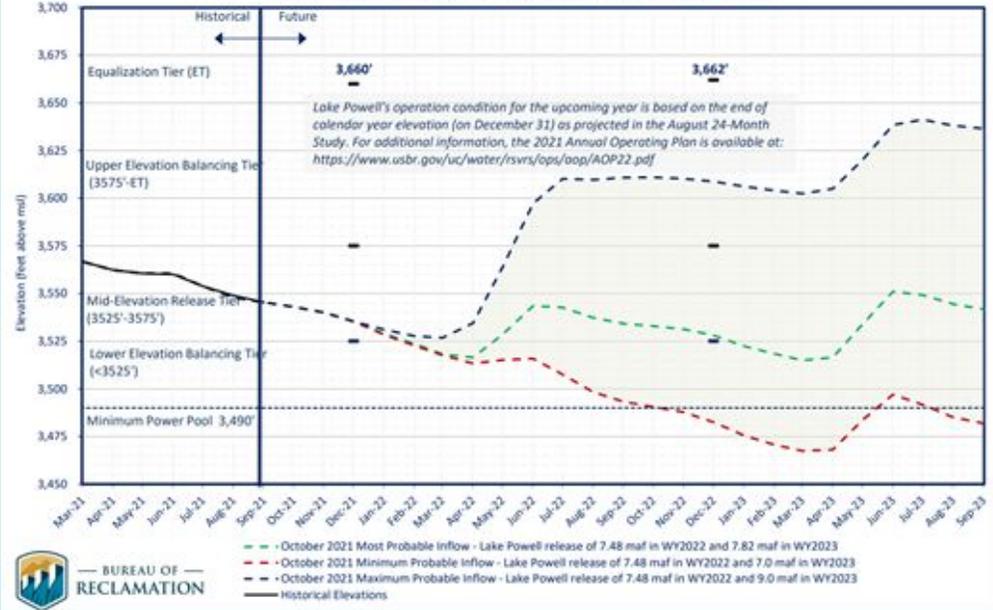
11/7/2021



Agency - USBR Provo Area Office  
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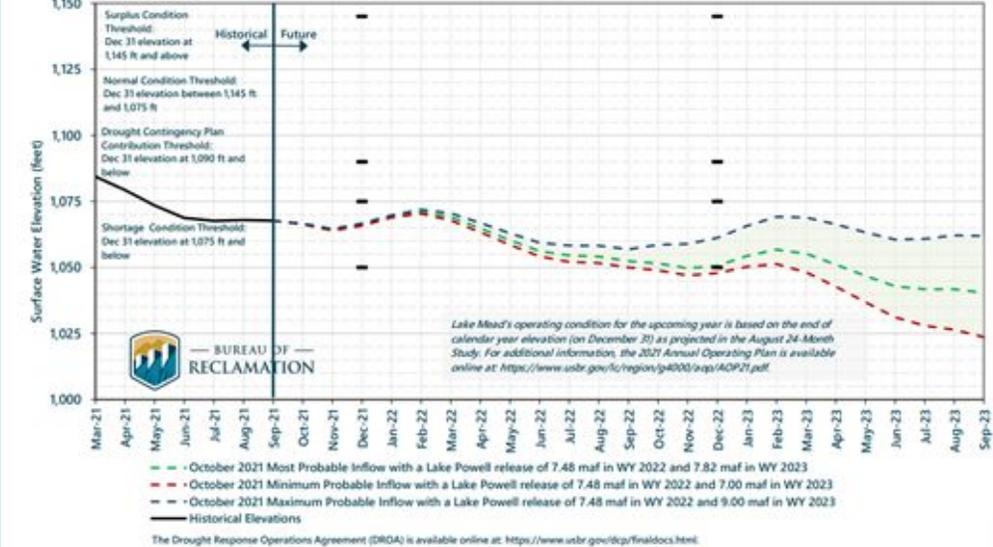
## Lake Powell End of Month Elevations

Projections from the October 2021 24-Month Study Inflow Scenarios



## Lake Mead End of Month Elevations

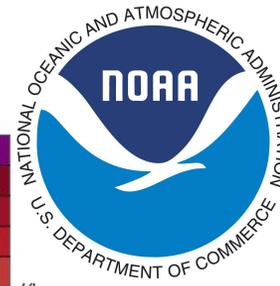
Projections from the October 2021 24-Month Study Inflow Scenarios



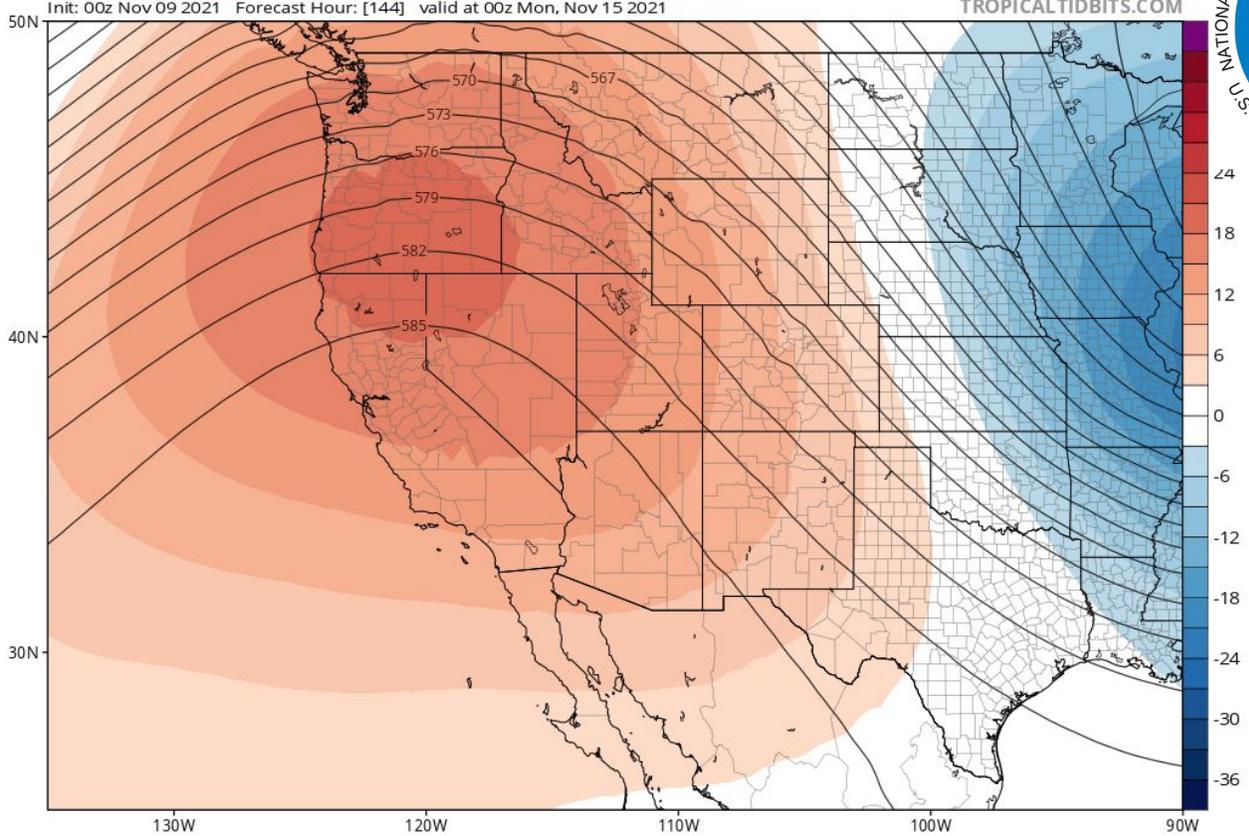
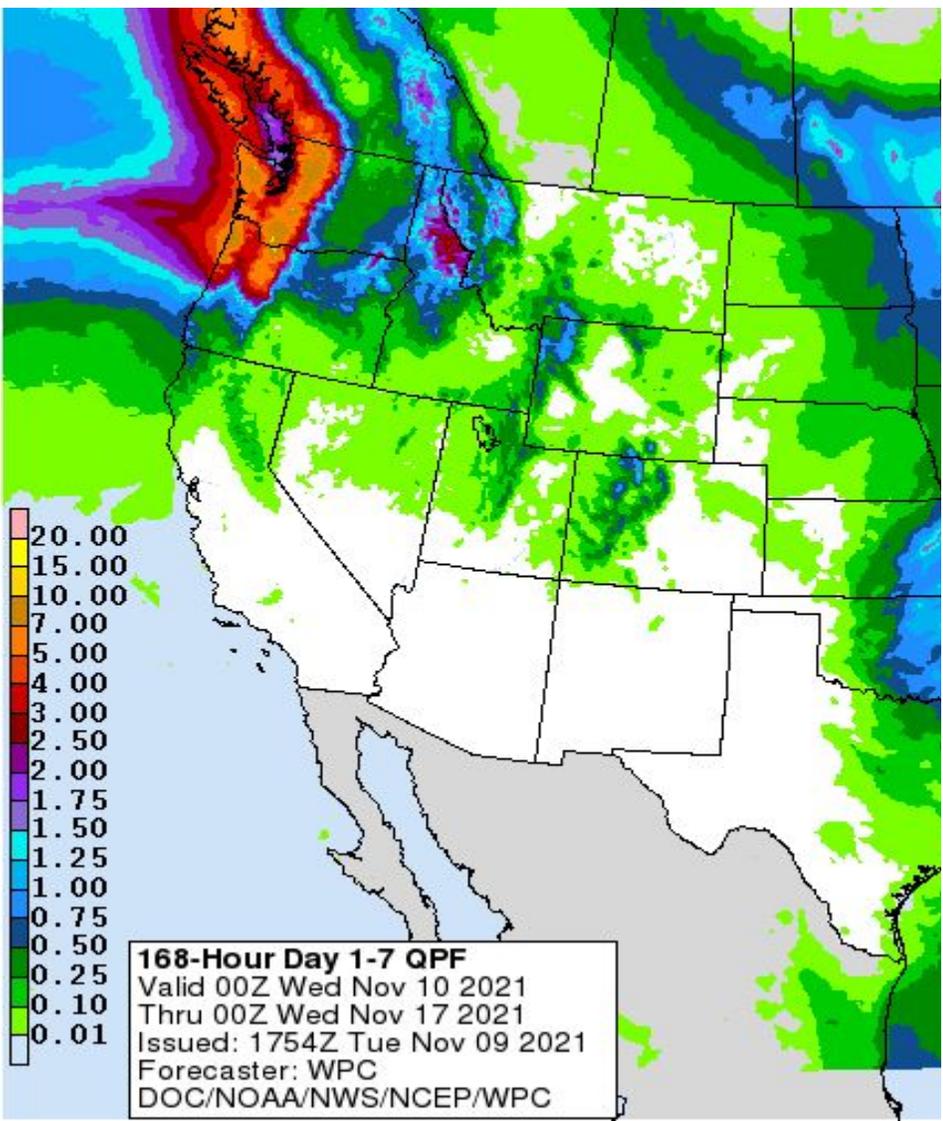
<https://www.usbr.gov/uc/water/crsp/studies/images/PowellElevations.pdf>



# Weather Forecast Office Utah Day 1-7 Outlook



EPS 500mb Geopotential Height & Anomaly (dam) (based on CFSR 1981-2010 Climatology)  
 Init: 00z Nov 09 2021 Forecast Hour: [144] valid at 00z Mon, Nov 15 2021 TROPICALTIDBITS.COM



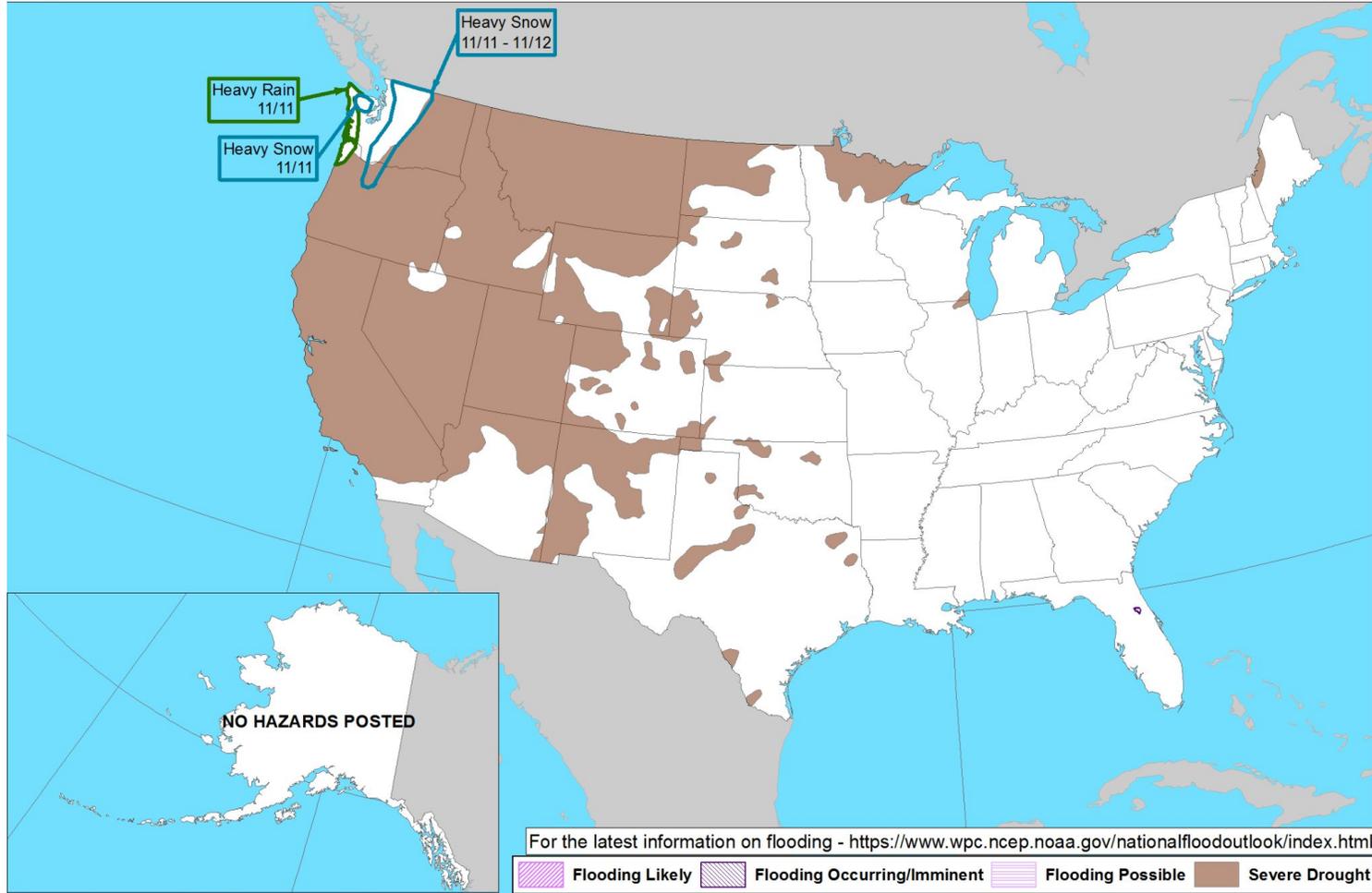
- Quick hitting storm today - tonight. Northern mountains largely 4-8" snow above 8000ft, with locally higher amounts up to 12".
- High pressure builds in late week into early next week. Temps 5-10 degrees above normal
- Uncertainty exists regarding trough evolution heading into midweek next week.

Agency - National Weather Service Weather Forecast Office  
 Presenter - Glen Merrill

# Weather Prediction Center U.S. Day 3-7 Hazards Outlook



**Day 3-7 U.S. Hazards Outlook**  
**Valid: 11/11/2021-11/15/2021**



**Weather Prediction Center**

Made: 11/08/2021 3PM EST

Follow us:

[www.wpc.ncep.noaa.gov](http://www.wpc.ncep.noaa.gov)

Agency - National Weather Service Weather Forecast Office

Presenter - Glen Merrill

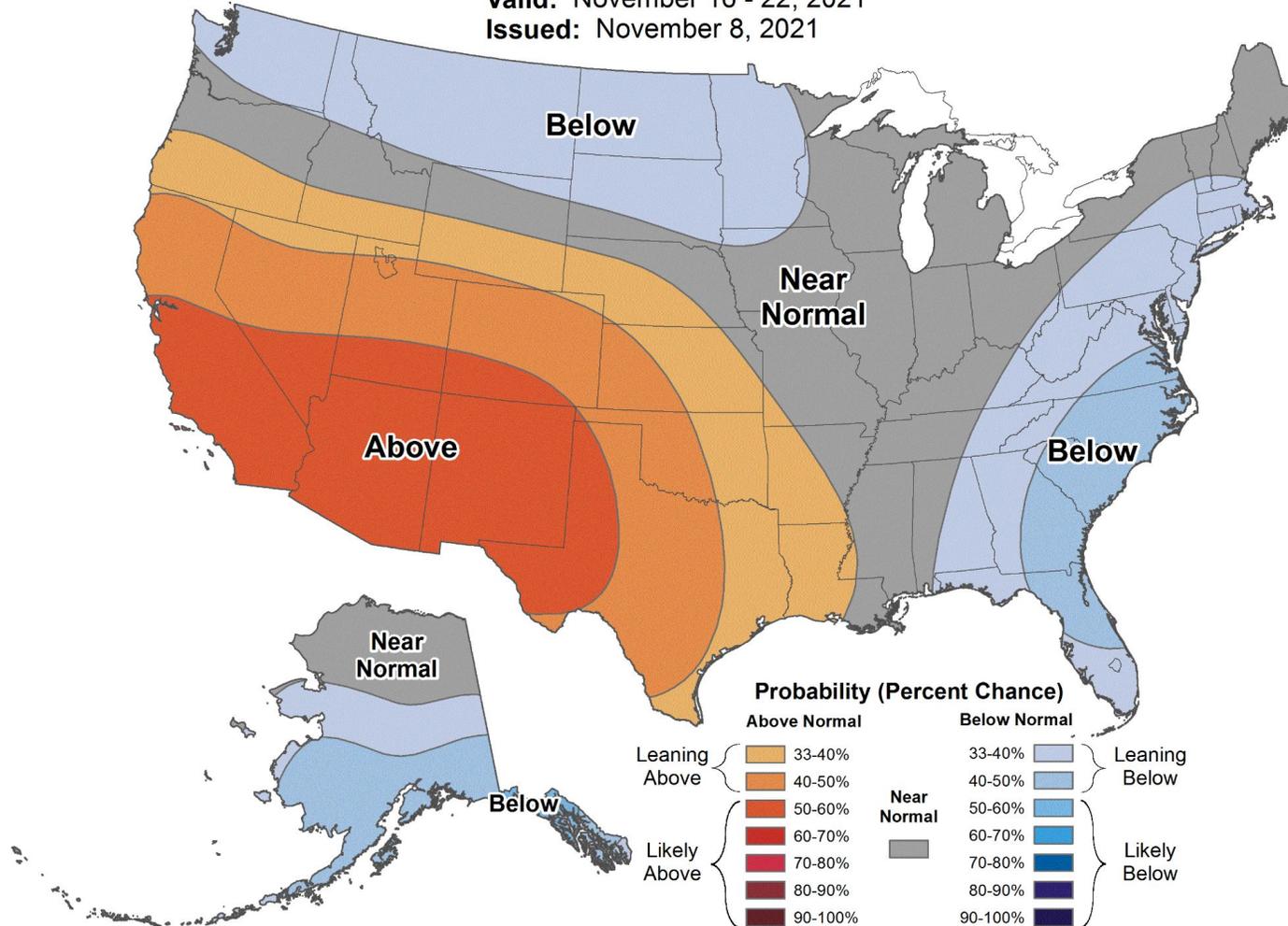
# Climate Prediction Center 8 to 14 Day Outlooks - Temperature



## 8-14 Day Temperature Outlook



Valid: November 16 - 22, 2021  
Issued: November 8, 2021



Agency - National Weather Service Weather Forecast Office  
Presenter - Glen Merrill

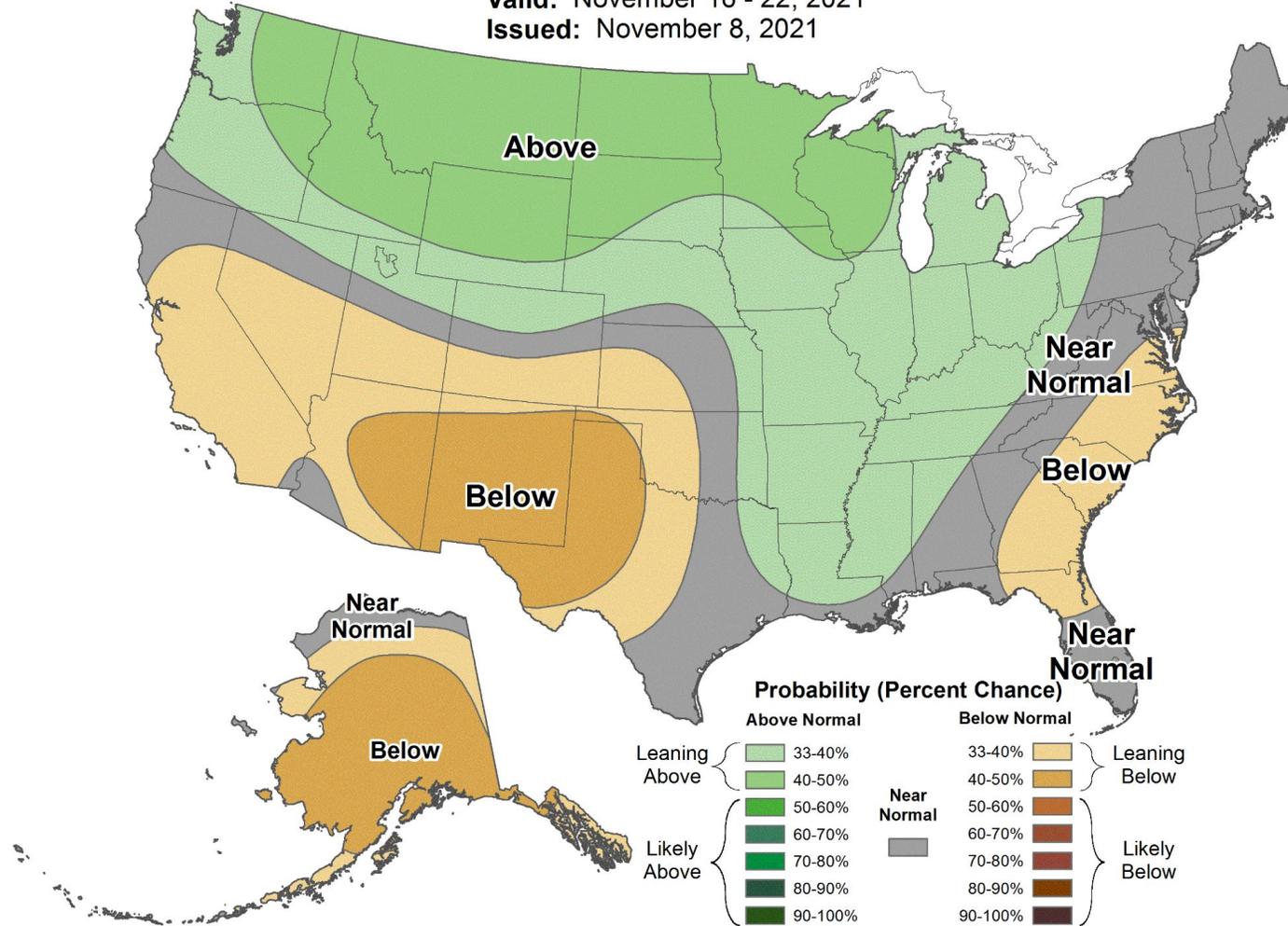
# Climate Prediction Center 8 to 14 Day Outlooks - Precipitation



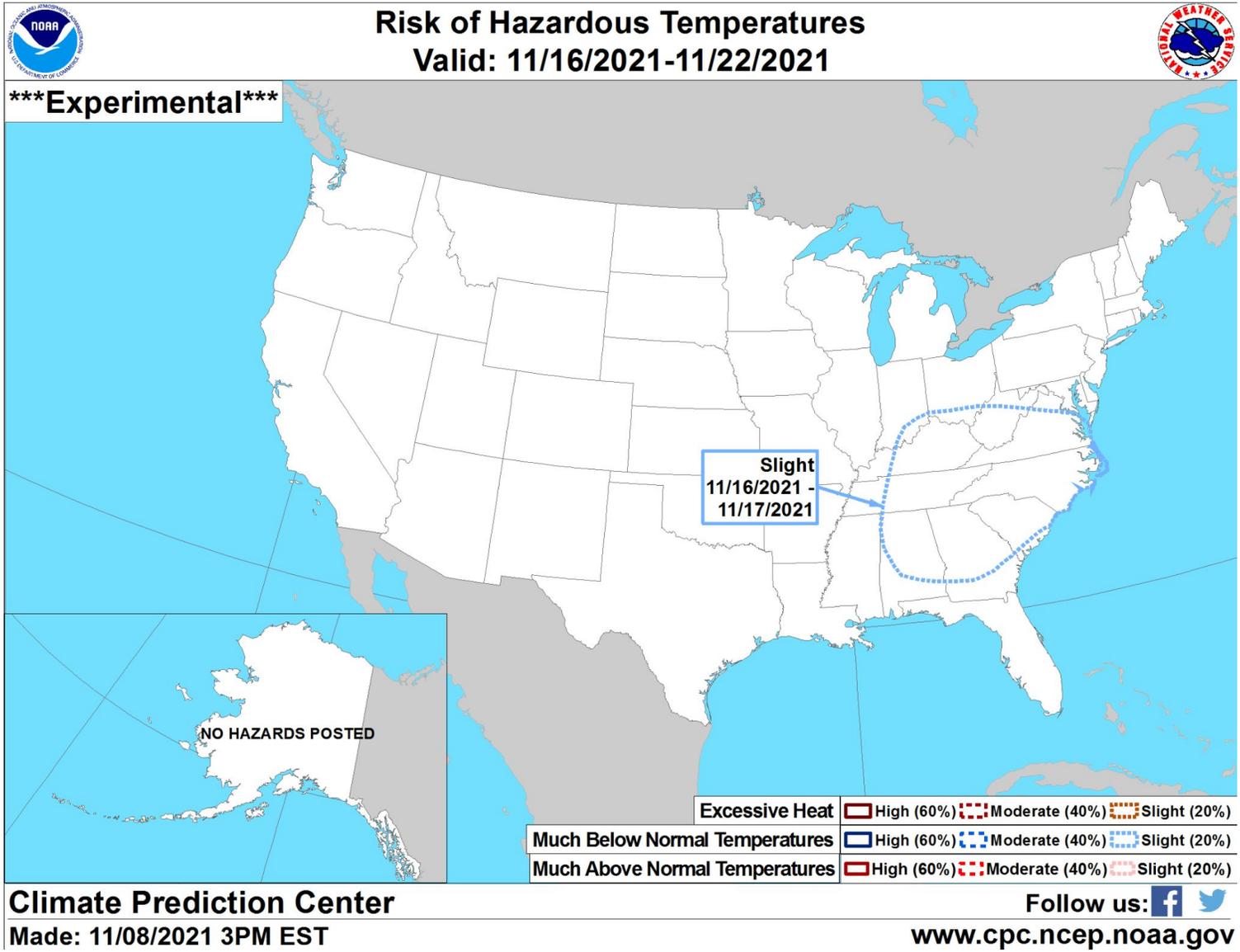
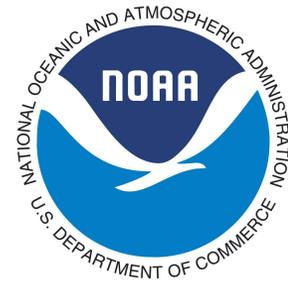
## 8-14 Day Precipitation Outlook



Valid: November 16 - 22, 2021  
Issued: November 8, 2021



# Climate Prediction Center U.S. Week-2 Hazards Outlook

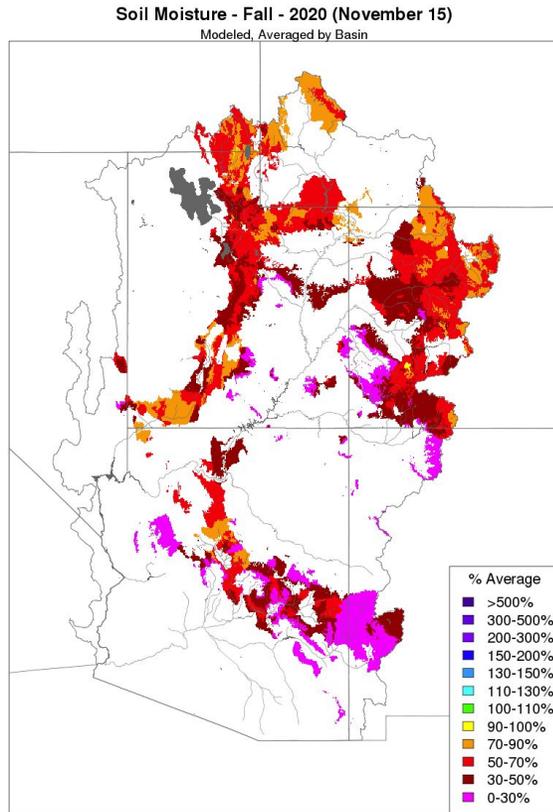


Agency - National Weather Service Weather Forecast Office  
Presenter - Glen Merrill

# Water Supply Forecasts Resume January 1, 2022

Our Initialized Gridded Soil Moisture Map will be published November 16th. This is our annual model tuning activity once all consumptive agricultural uses have finished and seasonal precipitation affects and primes the basins for winter. Adjusting the models tanks before winter precipitation begins in earnest, translates to better water supply forecast come spring 2022 as higher soil moistures lead to more efficient runoff.

Fall 2020

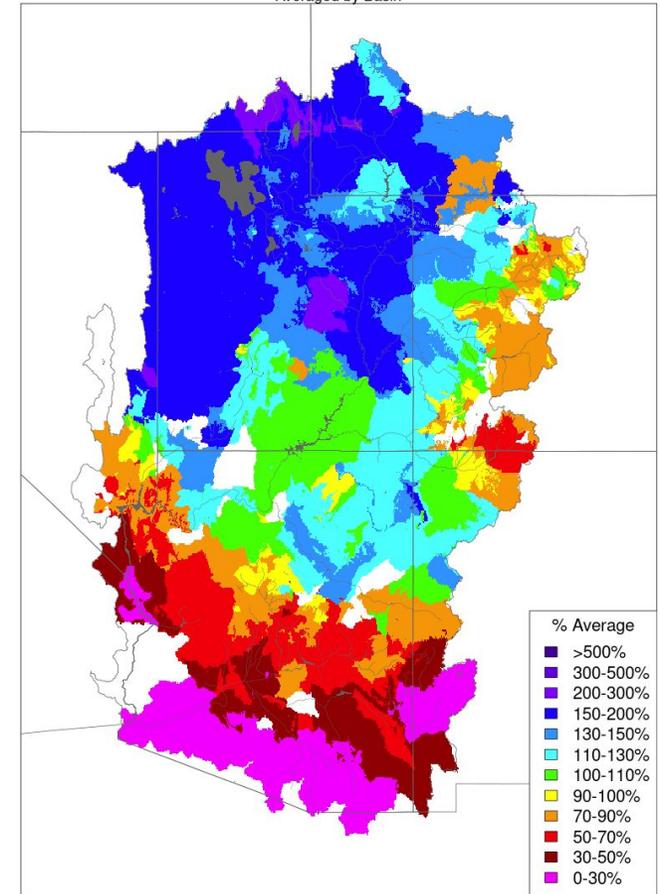


Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

Fall 2021  
Precipitation

Given the following pattern, when the Fall 2021 Soil Moisture Map is published next week we anticipate that it will be a big improvement over fall 2020 due to the active monsoon and above average precipitation since late August 2021 should show a marked improvement over fall 2020.

Seasonal to Date Precipitation, October 01 - November 09 2021  
Averaged by Basin



Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

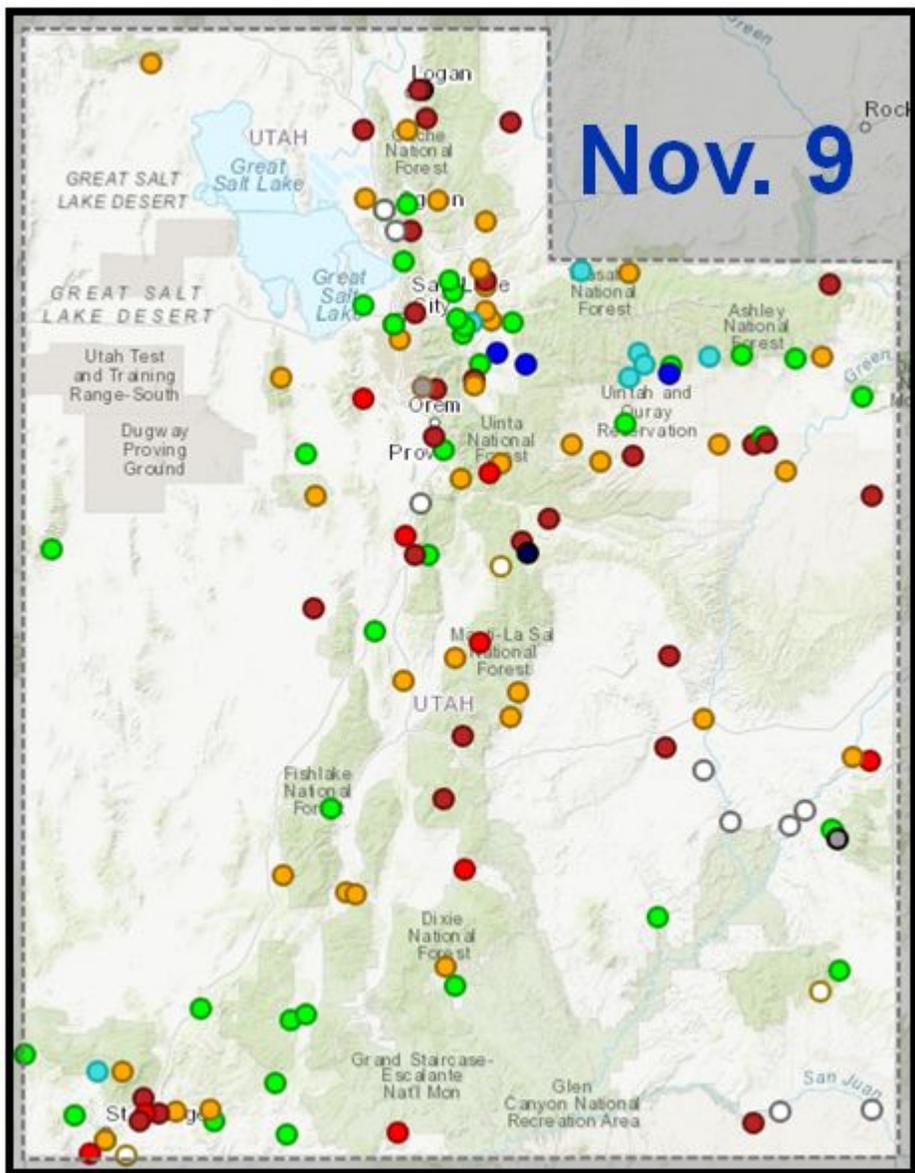
Agency - CBRFC

Presenter - Brent Bernard

Next week click into this link to see the 2021 update

[https://www.cbrfc.noaa.gov/rmap/grid800/index\\_soil.php?type=histsoilpct&area=cbrfc&type=soilfall](https://www.cbrfc.noaa.gov/rmap/grid800/index_soil.php?type=histsoilpct&area=cbrfc&type=soilfall)

# Current Streamflow Conditions

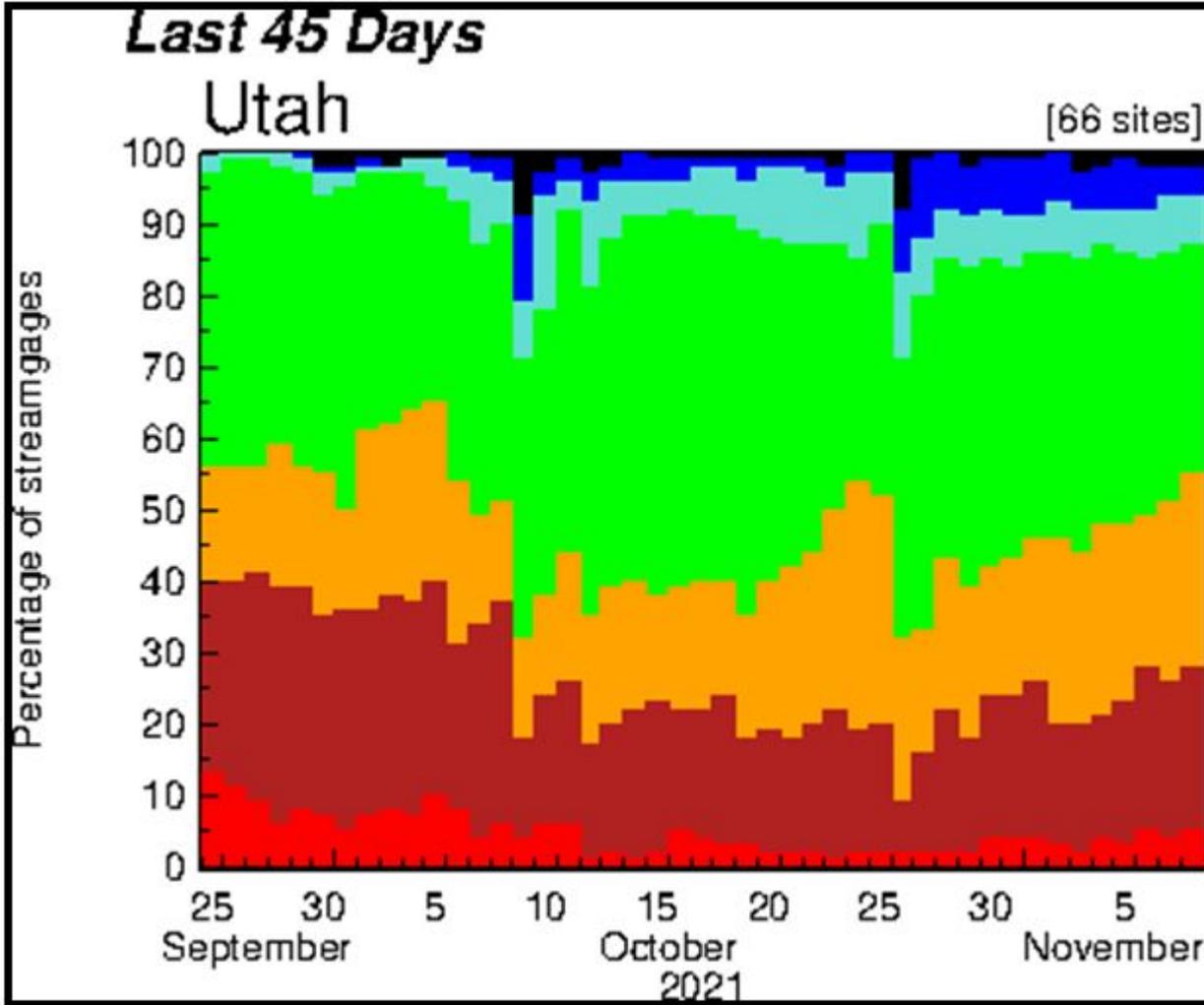


| Day-of-Year Status                     | # Gages | % Gages                                     |
|--|---------|---|
| All-time high for this day-of-year     | 1       | 0.7%  |
| Much above normal for this day-of-year | 3       | 2.2%  |
| Above normal for this day-of-year      | 7       | 5.1%  |
| Normal for this day-of-year            | 38      | 27.7% <span style="color: green;">█</span>  |
| Below normal for this day-of-year      | 36      | 26.3% <span style="color: orange;">█</span> |
| Much below normal for this day-of-year | 28      | 20.4% <span style="color: red;">█</span>    |
| All-time low for this day-of-year      | 9       | 6.6% <span style="color: darkred;">█</span> |
| Not ranked - insufficient record       | 10      | 7.3% █                                      |
| Not ranked - stream not flowing        | 2       | 1.5%  |
| Not ranked - no recent measurement     | 3       | 2.2%  |

| Streamflow: Status                      |   |
|---|---|
| <span style="color: red;">●</span>      | Above flood stage   |
| <span style="color: darkblue;">●</span> | All-time high for this day (100 <sup>th</sup> percentile (maximum)) |
| <span style="color: blue;">●</span>     | Much above normal (>90 <sup>th</sup> percentile)                    |
| <span style="color: cyan;">●</span>     | Above normal (76 <sup>th</sup> – 90 <sup>th</sup> percentile)       |
| <span style="color: green;">●</span>    | Normal (25 <sup>th</sup> – 75 <sup>th</sup> percentile)             |
| <span style="color: orange;">●</span>   | Below normal (10 <sup>th</sup> – 24 <sup>th</sup> percentile)       |
| <span style="color: red;">●</span>      | Much below normal (<10 <sup>th</sup> percentile)                    |
| <span style="color: darkred;">●</span>  | All-time low for this day (0 <sup>th</sup> percentile (minimum))    |
| <span style="color: yellow;">●</span>   | Not flowing   |
| <span style="color: grey;">●</span>     | Not ranked  |
| <span style="color: brown;">●</span>    | Measurement flag  |
| <span style="color: grey;">○</span>     | Recent measurement unavailable                                      |

Agency - USGS Utah Water Science Center  
 Presenter - Laura Haskell on behalf of Ryan Rowland

# Current Streamflow Conditions



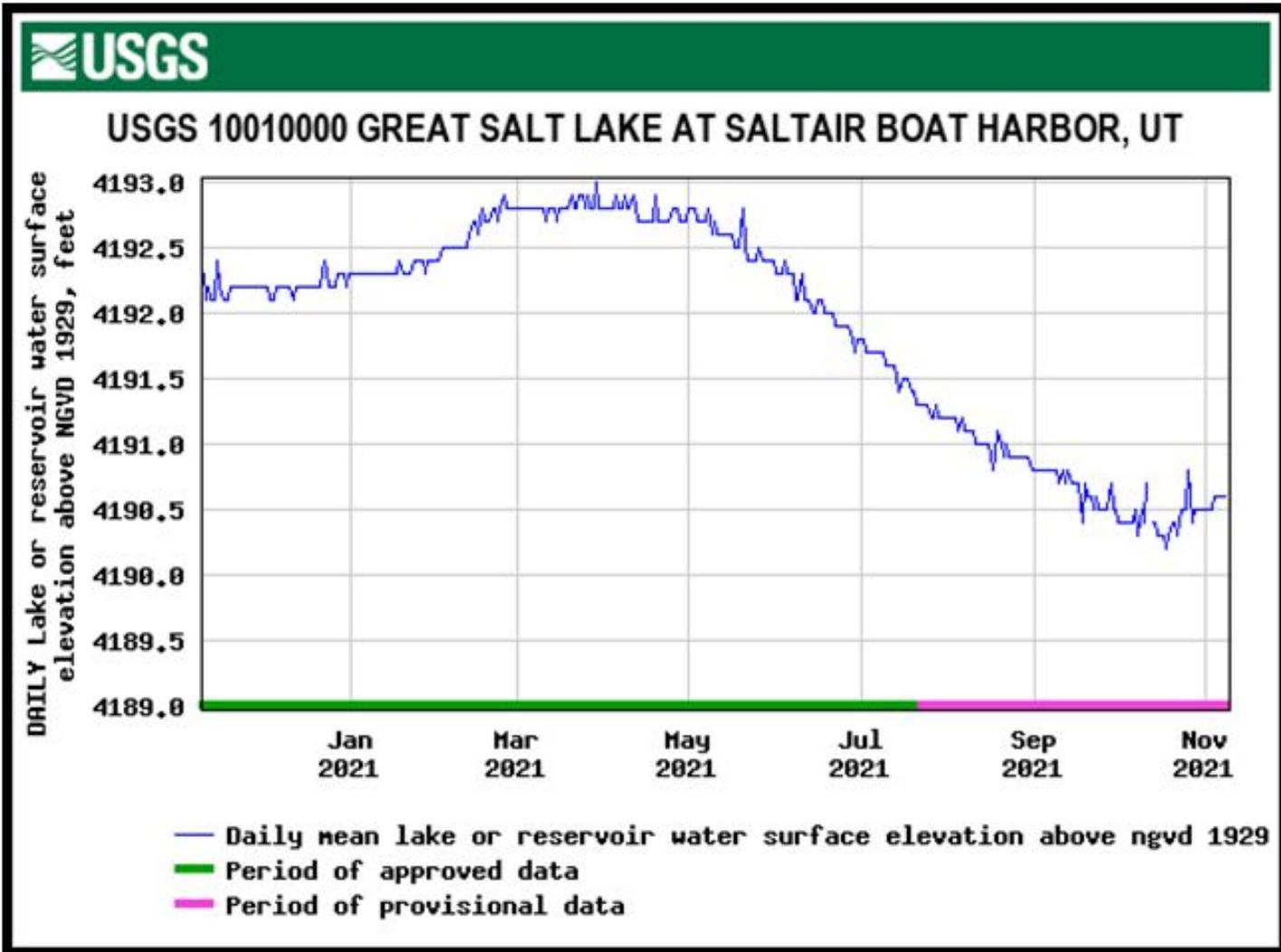
Mean daily Streamflow compared to historical streamflow for the day of the year

Sites must have at least 30 years of record to be included in this graphic

| Explanation - Percentile classes |                   |              |        |              |                   |      |         |
|----------------------------------|-------------------|--------------|--------|--------------|-------------------|------|---------|
|                                  |                   |              |        |              |                   |      |         |
| Low                              | <10               | 10-24        | 25-75  | 76-90        | >90               | High | No Data |
|                                  | Much below normal | Below normal | Normal | Above normal | Much above normal |      |         |

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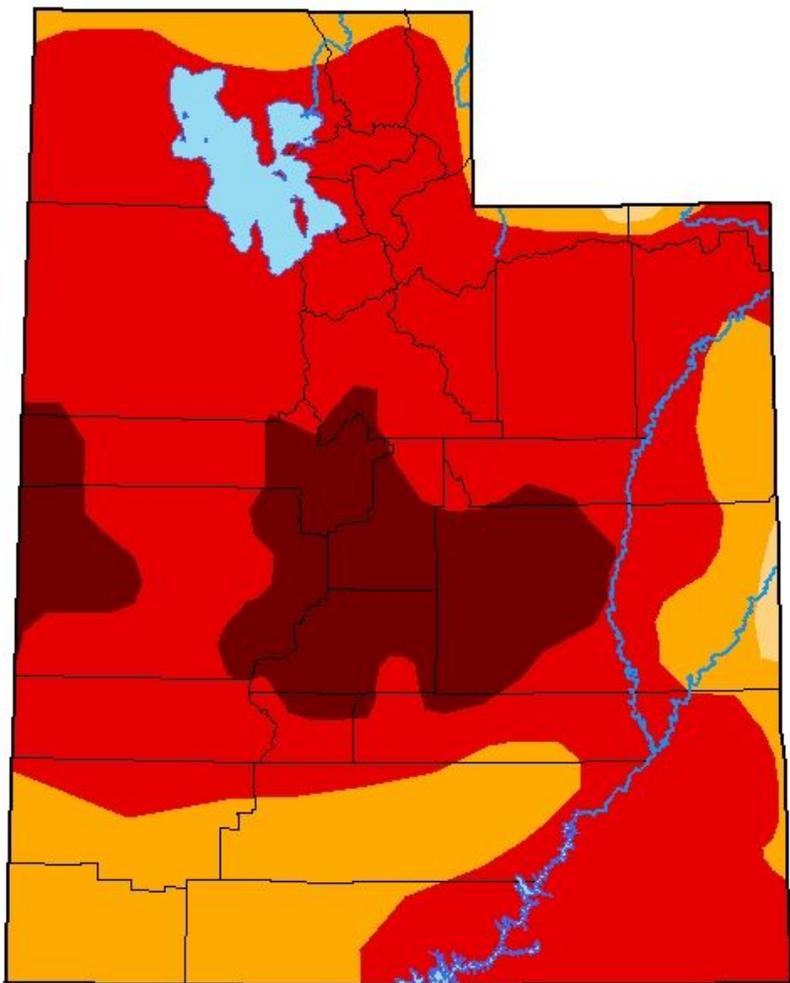
# Great Salt Lake Water Surface Elevation



- ❑ Mean daily value 11/8/2021 = 4,190.6'
- ❑ 4,190.2' 10/18/2021 (potential new historic low)

# U.S. Drought Monitor Utah

**November 2, 2021**  
(Released Thursday, Nov. 4, 2021)  
Valid 8 a.m. EDT



### Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

### Author:

Adam Hartman  
NOAA/NWS/NCEP/CPC

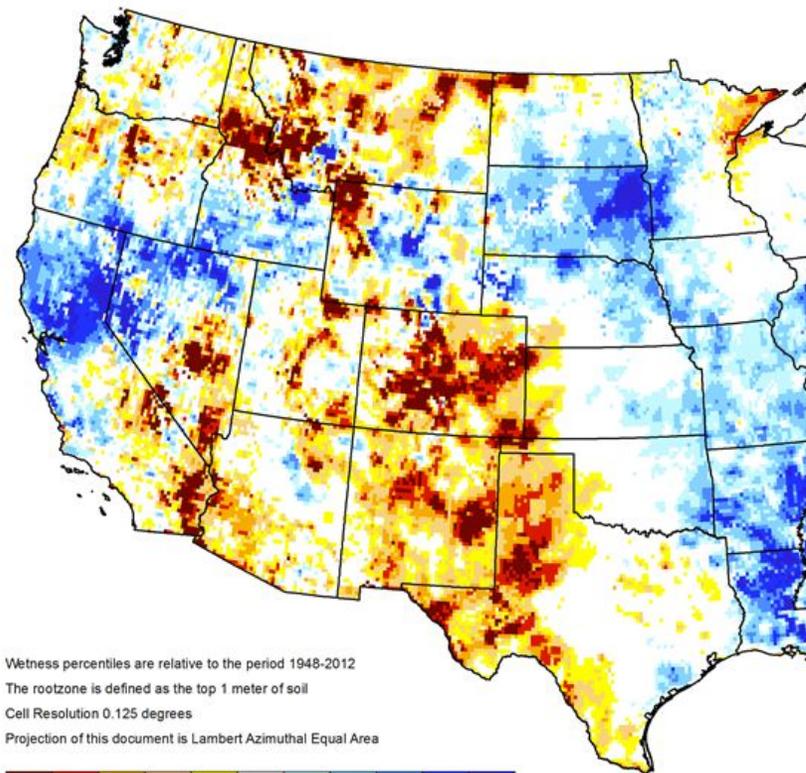


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)



## GRACE-Based Root Zone Soil Moisture

November 01, 2021



Wetness percentiles are relative to the period 1948-2012  
The rootzone is defined as the top 1 meter of soil  
Cell Resolution 0.125 degrees  
Projection of this document is Lambert Azimuthal Equal Area



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